IN THE CLAIMS

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with <u>underlining</u> and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please **AMEND** claims in accordance with the following:

1.   (Currently Amended) An apparatus having an inter-module data transfer confirming function comprising:

a first module;

a second module;

a bridge module connected <u>to </u>said first module and <u>to </u>said second module through interface buses to connect said first module and said second module to each other so that data can be transferred between said first module and said second module; and

a confirmation code setting means for setting, in said bridge module, a confirmation code for confirming data transfer from said bridge module to said second module when said first module transfers data to said second module via said bridge module through said interface buses;

said first module comprising:

a descriptor setting means for<u>, before data transfer is initiated,</u> setting a data transfer descriptor containing transfer information required for data transfer to said second module and a data transfer confirmation flag<u> set to "ON" when necessary to confirm the data transfer after the data transfer</u>;

a descriptor generating means for<u>, after the data transfer to said second module,</u> automatically generating, when said data transfer confirmation flag is "ON", a data transfer confirmation descriptor containing confirmation code reading information, which is required to read ~~out ~~said confirmation code from said bridge module to said first module, ~~on the basis of~~<u>based upon</u> said transfer information in said data transfer descriptor set by said descriptor setting means; and

a controlling means for controlling data transfer to said second module according to said transfer information in said data transfer descriptor set by said descriptor setting means, and for controlling, when said data transfer confirmation flag is "ON", after the data transfer to said second module is completed, reading of said confirmation code from said bridge module according to said confirmation code reading information in said data transfer confirmation descriptor automatically generated by said descriptor generating means.

2. (Original) The apparatus having an inter-module data transfer confirming function according to claim 1, wherein said first module comprises:

a first processing unit for generally managing said first module;

a second processing unit for carrying out data transfer through said interface buses according to an instruction from said first processing unit;

said first processing unit fulfilling a function as said descriptor setting means; and

said second processing unit fulfilling functions as said descriptor generating means and said controlling means.

3. (Original) The apparatus having an inter-module data transfer confirming function according to claim 1, wherein said first module further comprises:

a first determining means for determining whether data transfer between said bridge module and said second module has been carried out normally or abnormally, on the basis of said confirmation code read out from said bridge module; and

a second determining means for determining whether data transfer between said first module and said bridge module has been carried out normally or abnormally.

4. (Original) The apparatus having an inter-module data transfer confirming function according to claim 3, wherein when said first determining means determines that the data transfer has been carried out abnormally, said descriptor generating means automatically generates an error reading descriptor containing error reading information required to read out detailed error information from said bridge module to said first module, and said controlling means controls reading of said detailed error information from said bridge module according to said error reading information in said error reading descriptor automatically generated by said descriptor generating means.

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5.   (Original) The apparatus having an inter-module data transfer confirming function according to claim 4, wherein said first module comprises:

a first processing unit for generally managing said first module;

a second processing unit for carrying out data transfer through said interface buses according to an instruction from said first processing unit;

said first processing unit fulfilling functions as said descriptor setting means and said second determining means; and

said second processing unit fulfilling functions as said descriptor generating means, said controlling means and said first determining means.

6.   (Original) The apparatus having an inter-module data transfer confirming function according to claim 5, wherein when said second determining means determining that the data transfer has been carried out abnormally, said first processing unit obtains, from said second processing unit, said detailed error information read out from said bridge module, and instructs said second processing unit to re-transfer the data on the basis of said detailed error information.

7.   (Original) The apparatus having an inter-module data transfer confirming function according to claim 1, wherein when a plurality of data blocks are successively transferred from said first module to said second module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

8.   (Original) The apparatus having an inter-module data transfer confirming function according to claim 2, wherein when a plurality of data blocks are successively transferred from said first module to said second module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

9.   (Original) The apparatus having an inter-module data transfer confirming function according to claim 3, wherein when a plurality of data blocks are successively transferred from

said first module to said second module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

10.   (Original)   The apparatus having an inter-module data transfer confirming function according to claim 4, wherein when a plurality of data blocks are successively transferred from said first module to said second module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

11.   (Original)   The apparatus having an inter-module data transfer confirming function according to claim 5, wherein when a plurality of data blocks are successively transferred from said first module to said second module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

12.   (Original)   The apparatus having an inter-module data transfer confirming function according to claim 6, wherein when a plurality of data blocks are successively transferred from said first module to said second module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

13.   (Currently Amended) A storage controlling apparatus disposed between a disk unit and a host to control an access to said disk unit from said host, said storage controlling apparatus comprising:
    a disk interface module for controlling an interface with said disk unit;
    a host interface module for controlling an interface with said host;
    a management module for generally managing the whole of said apparatus;
    a bridge module connected to said disk interface module, said host interface module and said management module through interface buses to connect said disk interface module, said host interface module and said management module to one another so that data can be transferred among said disk interface module, said host interface module and said management

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module; and

a confirmation code setting means for setting, in said bridge module, a confirmation code for confirming data transfer from said bridge module to said management module when said disk interface module or said host interface module transfers data to said management module via said bridge module through said interface buses;

said disk interface module and/or said host interface module (hereinafter referred simply as said interface module) comprising:

a descriptor setting means for, before data transfer is initiated, setting a data transfer descriptor containing transfer information required for data transfer to said management module and a data transfer confirmation flag set to "ON" when necessary to confirm the data transfer after the data transfer;

a descriptor generating means for, after the data transfer to said management module, automatically generating, when said data transfer confirmation flag is "ON", a data transfer confirmation descriptor containing a confirmation code reading information, which is required to read out said confirmation code from said bridge module to said interface module, on the basis ofbased upon said transfer information in said data transfer descriptor set by said descriptor setting means; and

a controlling means for controlling data transfer to said management module according to said transfer information in said data transfer descriptor set by said descriptor setting means, and for controlling, when said data transfer confirmation flag is "ON", after the data transfer to said management module is completed, reading of said confirmation code from said bridge module according to said confirmation code reading information in said data transfer confirmation descriptor automatically generated by said descriptor generating means.

14.   (Original) The storage controlling apparatus according to claim 13, wherein said interface module comprises:

a first processing unit for generally managing said interface module;

a second processing unit for carrying out data transfer through said interface buses according to an instruction from said first processing unit;

said first processing unit fulfilling a function as said descriptor setting means; and

said second processing unit fulfilling functions as said descriptor generating means and said controlling means.

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15.   (Original) The storage controlling apparatus according to claim 13, wherein said interface module comprises:

a first determining means for determining, on the basis of said confirmation code read out from said bridge module, whether data transfer between said bridge module and said management module has been carried out normally or abnormally; and

a second determining means for determining whether data transfer between said interface module and said bridge module has been carried out normally or abnormally.

16.   (Original) The storage controlling apparatus according to claim 15, wherein when said first determining means determines that the data transfer has been carried out abnormally, said descriptor generating means automatically generates an error reading descriptor containing error reading information required to read out detailed error information from said bridge module to said interface module, and said controlling means controls reading of said detailed error information from said bridge module according to said error reading information in said error reading descriptor automatically generated by said descriptor generating means.

17.   (Original) The storage controlling apparatus according to claim 16, wherein said interface module comprises:

a first processing unit for generally managing said interface module;

a second processing unit for carrying out data transfer through said interface buses according to an instruction from said first processing unit;

said first processing unit fulfilling functions as said descriptor setting means and said second determining unit; and

said second processing unit fulfilling functions as said descriptor generating means, said controlling means and said first determining means.

18.   (Original) The storage controlling apparatus according to claim 17, wherein when said second determining unit determines that the data transfer has been carried out abnormally, said first processing unit obtains, from said second processing unit, said detailed error information read out from said bridge module, and instructs said second processing unit to re-transfer the data on the basis of said detailed error information.

19.   (Original) The storage controlling apparatus according to claim 13, when a plurality of data blocks are successively transferred from said interface module to said management module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

20.   (Original) The storage controlling apparatus according to claim 14, when a plurality of data blocks are successively transferred from said interface module to said management module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

21.   (Original) The storage controlling apparatus according to claim 15, when a plurality of data blocks are successively transferred from said interface module to said management module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

22.   (Original) The storage controlling apparatus according to claim 16, when a plurality of data blocks are successively transferred from said interface module to said management module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

23.   (Original) The storage controlling apparatus according to claim 17, when a plurality of data blocks are successively transferred from said interface module to said management module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

24.   (Original) The storage controlling apparatus according to claim 18, when a

plurality of data blocks are successively transferred from said interface module to said management module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

25.   (CURRENTLY AMENDED) An interface module for a storage controlling apparatus disposed between a disk unit and a host to control an access from said host to said disk unit, said storage controlling apparatus comprising said interface module for controlling an interface with said disk unit or said host, a management module for generally managing the whole of said storage controlling apparatus, a bridge module connected to said interface module and to said management module through interface buses to connect said interface module and said management module to each other so that data can be transferred between said interface module and said management module, and a confirmation code setting means for setting, in said bridge module, a confirmation code for confirming data transfer from said bridge module to said management module when said interface module transfers data to said management module via said bridge module through said interface buses, said interface module comprising:

a descriptor setting means for, before data transfer is initiated, setting a data transfer descriptor containing transfer information required for data transfer to said management module and a data transfer confirmation flag set to "ON" when necessary to confirm the data transfer after the data transfer;

a descriptor generating means for, after the data transfer to said management module, automatically generating, when said data transfer confirmation flag is "ON", a data transfer confirmation descriptor containing confirmation code reading information, which is required to read out said confirmation code from said bridge module to said interface module, on the basis of based upon said transfer information in said data transfer descriptor set by said descriptor setting means; and

a controlling means for controlling data transfer to said management module according to said transfer information in said data transfer descriptor set by said descriptor setting means, and for controlling, when said data transfer confirmation flag is "ON", after the data transfer to said management module is competed, reading of said confirmation code from said bridge module according to said confirmation code reading information in said data transfer confirmation descriptor automatically generated by said descriptor generating means.

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26.   (Original) The interface module for a storage controlling apparatus according to claim 25 comprising:

a first processing unit for generally managing said interface module;

a second processing unit for carrying out data transfer through said interface buses according to an instruction from said first processing unit;

said first processing unit fulfilling a function as said descriptor generating means; and

said second processing unit fulfilling functions as said descriptor generating means and said controlling means.

27.   (Original) The interface module for a storage controlling apparatus according to claim 25 further comprising:

a first determining means for determining whether data transfer between said bridge module and said management module has been carried out normally or abnormally, on the basis of said confirmation code read out from said bridge module; and

a second determining means for determining whether data transfer between said interface module and said bridge module has been carried out normally or abnormally.

28.   (Original) The interface module for a storage controlling apparatus according to claim 27, wherein when said first determining unit determines that the data transfer has been carried out abnormally, said descriptor generating means automatically generates an error reading descriptor containing error reading information required to read out detailed error information from said bridge module to said interface module, and said controlling means controls reading of said detailed error information from said bridge module according to said error reading information in said error reading descriptor automatically generated by said descriptor generating means.

29.   (Original) The interface module for a storage controlling apparatus according to claim 28 comprising:

a first processing unit for generally managing said interface module;

a second processing unit for carrying out data transfer through said interface buses according to an instruction from said first processing unit;

said first processing unit fulfilling functions as said descriptor setting means and said second determining unit; and

said second processing unit fulfilling functions as said descriptor generating means, said controlling means and said first determining means.

30.   (Original) The interface module for a storage controlling apparatus according to claim 29, wherein when said second determining means determines that the data transfer has been carried out abnormally, said first processing unit obtains, from said second processing unit, said detailed error information read out from said bridge module, and instructs said second processing unit to re-transfer the data on the basis of said detailed error information.

31.   (Original) The interface module for a storage controlling apparatus according to claim 25, wherein when a plurality of data blocks are successively transferred from said interface module to said management module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

32.   (Original) The interface module for a storage controlling apparatus according to claim 26, wherein when a plurality of data blocks are successively transferred from said interface module to said management module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

33.   (Original) The interface module for a storage controlling apparatus according to claim 27, wherein when a plurality of data blocks are successively transferred from said interface module to said management module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

34.   (Original) The interface module for a storage controlling apparatus according to claim 28, wherein when a plurality of data blocks are successively transferred from said interface module to said management module, said descriptor setting means sets only said data transfer

confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

35.   (Original) The interface module for a storage controlling apparatus according to claim 29, wherein when a plurality of data blocks are successively transferred from said interface module to said management module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".

36.   (Original) The interface module for a storage controlling apparatus according to claim 30, wherein when a plurality of data blocks are successively transferred from said interface module to said management module, said descriptor setting means sets only said data transfer confirmation flag in a data transfer descriptor for transferring the last data block among said plurality of data blocks to "ON".